

AMENDMENTS TO THE CLAIMS

Claim 1 (currently amended): A fluid injection head structure comprising:

5 a substrate;
at least one bubble generator positioned on the substrate;
~~at least one functional device positioned on the substrate~~
~~to control the bubble generator;~~
a first conductive trace composed of a poly-silicon layer;
10 at least one functional device positioned on the substrate
to control the bubble generator, wherein at least one
layer of the functional device is formed on the same
poly-silicon layer as the first conductive trace; and
a second conductive trace that electrically couples the
15 functional device with the bubble generator, and
couples the functional device with the first
conductive trace.

Claim 2 (original): The fluid injection head structure of
20 claim 1 further comprising a contact layer positioned
between the first conductive trace and the second
conductive trace to electrically couple the first
conductive trace with the second conductive trace.

25 Claim 3 (original): The fluid injection head structure of
claim 1 wherein the second conductive trace comprises at
least one pad.

Claim 4 (original): The fluid injection head structure of
30 claim 1 further comprising a dielectric layer positioned
between the first conductive trace and the second
conductive trace.

Claim 5 (original): The fluid injection head structure of claim 1 wherein the functional device is a transistor comprising a source, a drain, and a gate.

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Claim 6 (original): The fluid injection head structure of claim 5 wherein the transistor is a metal oxide semiconductor field effect transistor (MOSFET) and the gate is composed of poly-silicon.

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Claim 7 (cancelled).

Claim 8 (original): The fluid injection head structure of claim 1 wherein the material of the second conductive trace is any one of aluminum, gold, copper, tungsten, alloys of aluminum-silicon-copper, and alloys of aluminum-copper.

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Claim 9 (original): The fluid injection head structure of claim 1 further comprising:

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at least one chamber positioned on the substrate, wherein each chamber comprises at least one orifice through to the surface of the substrate; and
at least one manifold connected to the chamber for allowing fluid to flow into the chamber.

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Claim 10 (currently amended): The fluid injection head structure of claim 9 wherein the bubble generator comprises a first bubble generating device and a second bubble generating device positioned adjacent to a corresponding orifice on a corresponding chamber, wherein when the chamber is full of fluid, the first bubble generating device generates a first bubble, and then the second bubble

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generating device generates a second bubble to eject the fluid from the chamber through the orifice.

5 Claim 11 (currently amended): The fluid injection head structure of claim 10 wherein the first bubble serves as a virtual valve, restricts flow of fluid out of the chamber.

10 Claim 12 (currently amended): The fluid injection head structure of claim 9 wherein the injection head is used as a print head of an inkjet printer, the manifold is connected to an ink cartridge, and the fluid is the ink of the ink cartridge.

15 Claims 13-25 (cancelled).

Claim 26 (new): The fluid injection head structure of claim 6 wherein the gate of the MOSFET is formed on the same poly-silicon layer as the first conductive trace.

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